REMARKS

At the outset, Applicant requests an interview to advance prosecution.

The Examiner noted that the recitation "a_service" in claim 1 needs to be corrected. Applicant amended independent claim 1 accordingly.

The Examiner requested that the computer program listing be submitted on a compact disc in compliance with 37 C.F.R. §1.52(e). Applicant provides herewith a CD with the computer program listing previously appearing in the application, and amended the application to include a statement in accordance with the provisions of 37 C.F.R. §1.77(b)(4), and removed the computer listing previously appearing on pages 28-51 of the application.

Claims 1, 4-9, and 12-14, and 16 are currently pending.

The Examiner rejected claims 1, 4-9, and 12-16 under 35 U.S.C. §103(a) as unpatentable over Huang *et al.*, "A General Purpose Virtual Collaboration Room," IEEE, pages 1-10, 10/1999 (Huang) in view of Yang *et al.*, "Transaction Management in Collaborative Virtual Environment," 7/26/1999 (Yang) and Pirri *et al.*, "A Java applet-based virtual environment as a useable interface to distributed and collaborative application on the Internet," IEEE 6/1999 (Pirri). Applicant respectfully traverses this rejection.

Applicant amended independent claim 1 to recite that the plurality of objects includes one or more service objects that are each configured to deploy at least one other object of the plurality of objects into the virtual object space and to process the at least one other object to perform one or more of a plurality of operations using the at least one other object, and to further recite that at least some of the plurality of operations include operations that are implemented by at least one of the one or more service objects to adapt an external legacy service to perform operations associated with the external legacy

service on another object deployed and processed by the at least one of the one or more service objects. Support for the amendments is provided throughout the originally-filed application, including, for example, at page 7, paragraph 35, page 9, paragraphs 42 and 44, page 10, paragraph 48, pages 24-25, paragraph 101-102, etc. Applicant similarly amended independent claims 5 and 9.

Applicant's independent claim 1 therefore recites "a virtual object space providing access to a plurality of objects, each object having a set of functionality and being identifiable by a unique identifier provided by the virtual object space, ... wherein the plurality of objects includes one or more service objects that are each configured to deploy at least one other object of the plurality of objects into the virtual object space and to process the at least one other object to perform one or more of a plurality of operations using the at least one other object; wherein at least some of the plurality of operations include operations that are implemented by at least one of the one or more service objects to adapt an external legacy service to perform operations associated with the external legacy service on another object deployed and processed by the at least one of the one or more service objects." Thus, the plurality of objects comprising the virtual object space includes service objects which are the objects that deploy and process other object (e.g., content objects). Such service objects, like any other object in the virtual object space, are identifiable by a unique identifier:

> An object service provides one or more object types embedded into the object framework. The task of an object service is to deploy/put objects into the VOS. Without any object services, the VOS would be empty. Examples include a calendar, folder, invoice or inbox. There can be one special object service coming with the object framework: the VirtualObjectSpace service ("VOS service"). This is the object service that represents the object services themselves. As discussed above, each object service is a VOS object of the VOS. The VOS service manages these services and acts as the

> service for all object service objects. As such, the VOS service is also an object, the root object of the logical object space structure spanned by the children relationship.
>
> (Application, page 24, paragraph 101)

Furthermore, some service objects perform an adaptation operation such that operations of an external legacy service (e.g., Microsoft® Word, Adobe® Acrobat, etc.) are adapted to be performed on an object deployed and processed by the service object implementing the adaptation functions:

> As mentioned above, each type of VOS object known to the object framework is implemented and deployed by an application, and applications responsible for the creation deployment and maintenance of VOS objects are referred to as object services. Object services are also regarded as framework objects and as such are assigned with identifiers. Consequently, each service provides access to at least one object; the service object itself. Additionally, a service generates VOS objects, which can be propagated as child objects of the parent service object. For example, a document management service can generate documents and folders, which top level folder objects are then children of the document management service object. ...
>
> ...
>
> Referring to FIG. 5, [*FIG. 5 is described as "a schematic showing an interaction between a VOS service object and an object framework"*] a service can act as an adapter 505 between a legacy implementation 510 and the object framework 520. The service is tasked to provide two mappings 515: mapping identifiers to VOS objects and to internal object representations in the chosen programming language. ...
>
> (Application, pages 12-13, paragraphs 54 and 58)

In contrast, none of the cited references discloses or suggests at least the features of "a virtual object space providing access to a plurality of objects, each object having a set of functionality and being identifiable by a unique identifier provided by the virtual object

space, ... wherein the plurality of objects includes one or more service objects that are each configured to deploy at least one other object of the plurality of objects into the virtual object space and to process the at least one other object to perform one or more of a plurality of operations using the at least one other object; wherein at least some of the plurality of operations include operations that are implemented by at least one of the one or more service objects to adapt an external legacy service to perform operations associated with the external legacy service on another object deployed and processed by the at least one of the one or more service objects," as recited by amended claim 1.

Huang describes a general purpose virtual collaboration room (VCR) that enables a group of remote individuals to flexibly and naturally conduct their collaborative teachings/learning/working without constraints on collaboration types, working styles, group scales, and system platforms (Huang, Abstract). Huang further describes that management of a VCR consists of a User Panel, Object Cabinet, Object Panel, and Workspace Panel. Huang describes the Object Cabinet and Object Panel as follows:

- The *object cabinet* is for storing and creating available objects. Any user can get objects from the cabinet at anytime as needed and places them in anywhere in the workspace. The available objects include planning, voting, applet for interactive simulations, plain text file, HTML file or web page, image, graphics, audio, video, animation and recorded object. The types and the number of objects used during collaborations are not fixed. That is to say, each group of users can freely design and arrange their workspace in any style by getting and placing the objects just as a user would do in a real room. The relations among people, objects, and space are naturally embodied and implemented in the design of **Object Cabinet**.
- The *object panel* is for controlling the objects in the workspace. An object has its life cycle, born→alive→dead. When a user gets an object from the object cabinet, the object is born. When the object is not longer used and terminated by its owner, the object is dead. During the lifetime, an object is manipulated by its owner of handler.

> The object panel provides two sets of functions. The first set makes objects' information accessible and the other set checks whether a user has a right of controlling or manipulating an object and (if the user has the right) to support such control and manipulation. Here, a user's behavior is governed by their roles related to an object and a set of rules emulating social rules. The object panel and the object cabinet together embody the relations between people and objects.

(Huang, pages 3-4)

Thus, while Huang describes that its VCR uses objects, Huang, however, does not describe that its VCR uses service objects that are configured to deploy and process other objects in the VCR. Much less does Huang describe service objects that are used as adapters to adapt an external legacy service to perform operations associated with the external legacy service on another object deployed and processed by the at least one of the one or more service objects. Accordingly, Huang fails to disclose or suggest at least the features of "a virtual object space providing access to a plurality of objects, each object having a set of functionality and being identifiable by a unique identifier provided by the virtual object space, ... wherein the plurality of objects includes one or more service objects that are each configured to deploy at least one other object of the plurality of objects into the virtual object space and to process the at least one other object to perform one or more of a plurality of operations using the at least one other object; wherein at least some of the plurality of operations include operations that are implemented by at least one of the one or more service objects to adapt an external legacy service to perform operations associated with the external legacy service on another object deployed and processed by the at least one of the one or more service objects," as recited by amended claim 1.

Pirri describes a Java-based applet DVE (Distributed Virtual Environment) named VERSA (Virtual Environment for Remote Services Access) conceived as a common users' platform for acceding to services and applications by means of virtual reality and multimedia communication (Pirri, Abstract). Pirri, however, does not cure the above noted deficiencies of Huang. Accordingly, Pirri too fails to disclose or suggest at least the features of "a virtual object space providing access to a plurality of objects, each object having a set of functionality and being identifiable by a unique identifier provided by the virtual object space, ... wherein the plurality of objects includes one or more service objects that are each configured to deploy at least one other object of the plurality of objects into the virtual object space and to process the at least one other object to perform one or more of a plurality of operations using the at least one other object; wherein at least some of the plurality of operations include operations that are implemented by at least one of the one or more service objects to adapt an external legacy service to perform operations associated with the external legacy service on another object deployed and processed by the at least one of the one or more service objects," as recited by amended claim 1.

Yang describes Collaborative Virtual Environments (CVE) and the use of database transaction modeling in the design and development of CVE (Yang, Abstract). Yang, however, fails to cure the deficiencies of Huang and/or Pirri in relation to the features pertaining to the service object. Indeed, Yang does not at all discuss service objects, or any type of objects. Accordingly, Yang also fails to disclose or suggest at least the features of "a virtual object space providing access to a plurality of objects, each object having a set of functionality and being identifiable by a unique identifier provided by the virtual object space, ... wherein the plurality of objects includes one or more service

objects that are each configured to deploy at least one other object of the plurality of objects into the virtual object space and to process the at least one other object to perform one or more of a plurality of operations using the at least one other object; wherein at least some of the plurality of operations include operations that are implemented by at least one of the one or more service objects to adapt an external legacy service to perform operations associated with the external legacy service on another object deployed and processed by the at least one of the one or more service objects," as recited by amended claim 1.

Because none of the cited references discloses or suggests, alone or in combination, at least the features of "a virtual object space providing access to a plurality of objects, each object having a set of functionality and being identifiable by a unique identifier provided by the virtual object space, ... wherein the plurality of objects includes one or more service objects that are each configured to deploy at least one other object of the plurality of objects into the virtual object space and to process the at least one other object to perform one or more of a plurality of operations using the at least one other object; wherein at least some of the plurality of operations include operations that are implemented by at least one of the one or more service objects to adapt an external legacy service to perform operations associated with the external legacy service on another object deployed and processed by the at least one of the one or more service objects," Applicant's independent claim 1, and the claims depending from it, are patentable over the cited art.

Claims 5 and 9, although of different scope, include features similar to those noted above with respect to claim 1. Claims 6-8 depend from claim 5. Claims 12, 14, and 16

depend from claim 9. For at least the reasons given above with respect to claim 1, the rejection under 35 U.S.C. § 103(a) of claims 5-9, 12, 14, and 16 should be withdrawn.

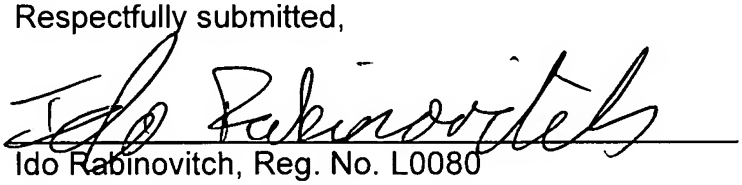
CONCLUSION

It is believed that all of the pending claims have been addressed in this paper. However, failure to address a specific rejection, issue or comment, does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above are not intended to be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment. Applicant asks that all claims be allowed.

The Commissioner is authorized to charge any additional fees or credit overpayments to Deposit Account No. 50-0311, reference No. 34874-162/2003P00269US. If there are any questions regarding this reply, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,

Date: January 20, 2010



Ido Rabinovitch, Reg. No. L0080

Address all written correspondence to
Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.
One Financial Center
Boston, Massachusetts 02111
Customer No. 64280
Telephone: 617-348-1806
Facsimile: 617-542-2241